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EXAMPLES

[0049] The following examples are illustrative only and are not intended to limit the scope of the invention as defined by the appended claims.

Strains and Media

[0050] Bacterial strains used were *Corynebacterium glutamicum* ATCC 21253 and NRRL B-11474. These strains have an auxotrophy for homoserine (ATCC 21253) and for threonine, methionine and alanine (NRRL B-11474).

[0051] Defined medium for *Corynebacterium glutamicum* ATCC 21253 contained the following ingredients (per liter): glucose, 20 g; NaCl, 2 g; citrate (trisodium salt, dihydrate), 3 g; $CaCl_2 \cdot 2H_2O$, 0.1 g; $MgSO_4 \cdot 7H_2O$, 0.5 g; $Na_2EDTA \cdot 2H_2O$, 75 mg; $FeSO_4 \cdot 7H_2O$, 50 mg; 100x salt solution, 20 ml; K_2HPO_4, 4 g; KH_2PO_4, 2 g; $(NH_4)_2SO_4$, 7.5 g; urea, 3.75 g; leucine, 0.1 g; threonine, 0.15 g; methionine, 0.05 g; thiamine, 0.45 mg; biotin, 0.45 mg; pantothenic acid, 4.5 mg (pH 7.0). The salt solution contained the following ingredients (per liter): $MnSO_4$, 200 mg; $Na_2B_4O_7 \cdot 10H_2O$, 20 mg; $(NH_4)_6Mo_7O_{24} \cdot 4H_2O$, 10 mg; $FeCl_3 \cdot 6H_2O$, 200 mg; $ZnSO_4 \cdot 7H_2O$, 50 mg; $CuCl_2 \cdot 2H_2O$, 20 mg (pH 2.0).

[0052] Defined medium for *Corynebacterium glutamicum* NRRL B-11474 contained the following ingredients (per liter): glucose, 20 g; NaCl, 1 g, $MgSO_4 \cdot 7H_2O$, 0.4 g; $FeSO_4 \cdot 7H_2O$, 0.01 g; $MnSO_4 \cdot H_2O$, 0.01 g; KH_2PO_4, 1 g; $(NH_4)_2SO_4$, 10 g; urea, 2.5 g; alanine, 0.5 g; threonine, 0.25 g; methionine, 0.5 g; thiamine, 0.45 mg; biotin, 0.45 mg; niacinamide, 50 mg (pH 7.2).

[0053] *Pyruvate Carboxylase and Phosphoenol Pyruvate Carboxylase Assay*

[0054] Pyruvate carboxylate and phosphoenol pyruvate carboxylate assays were performed with permeabilized cells prepared by the following method. Log phase cells were harvested by centrifugation for 10 min at 5000 xg at 4°C and washed